



The Blurb



Newsletter of The Phil-Mont Mobile Radio Club

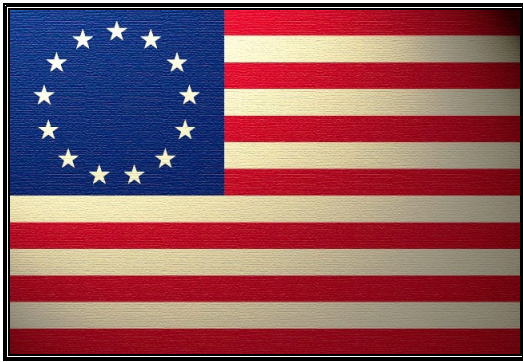
60 Years of Public Service, 1949 to 2009

Volume 59 Number 6

www.phil-mont.org

June 2009

Looks like a busy June!



Old Glory then...



and now

Flag Day is on the 14th

The Digital Transition is on the 12th

No, really. Seriously. They mean it this time!

Summer begins on the 21st

Father's Day is on the 21st

And of course...**Field Day!**

Starting at 1800 UTC on Saturday the 27th

<i>The Blurb</i> is published monthly by and for the members of The PHIL-MONT MOBILE RADIO CLUB, Inc., whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. Copying and quoting is permitted with a credit line. We gladly exchange publications with other amateur radio clubs. Requests should be sent to the Editor. Subscriptions are available to non-members for \$12, addressed to the Treasurer. Editor: Rick DeVirgiliis ND3B nd3b@arrl.net 215-908-7225 Club Archivist: Gwen Patton NG3P ng3p@arrl.net 610-630-9862 Labels and mailing: WB3KOJ & WB3KOH Submissions deadline: All copy must be in the hands of the Editor by the 20th of the previous month.	Directors: W3AOK (09) WA3KIO (09) N3XKE (09) N3MT (10) KB2ERL (10) KB3IV (10) NS3K (A)	Contact Phil-Mont: P.O. Box 88 Abington, PA 19001 http://www.phil-mont.org Webmistress: Maggie K3XS k3xs@arrl.net For club information: Contact any club officer, or the repeaters listed below. Address or club directory changes and articles for the membership e-mail list should be sent to: wb3koj@comcast.net
	Sunday Morning Net Schedules • 2 Meter/ 70cm Net..... at 0930L on W3QV repeater • 10-on-10 Net at 1000L 28.393 MHz USB (±QRM) • 75 meter Net at 1020L 3.993 MHz LSB • ARES at 2100L on the W3QV repeater	

Committees Archives: NG3P Audit: NS3K Awards: open Blurb folding: WB3KOJ & WB3KOH Directory: WB3KOJ	DX: N3MT Emerg. Coord: K3HWE Field Day: KE3QB Internet: K3XS Membership: N3XKE Net Control: KB3IV Publicity: W3RM	Program: Club VP Public Service: KE3QB Refreshments: W3AOK Repeater: W3AOK Skywarn: WX3PHI Sunshine: N3GLU	TVI: W3VVS VE Program: NS3K W3AA Trustee: WU3I Welcome: N3UBV Youth: N3MT
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All visitors are welcome!

The club meets at 7:30 PM on the *second* non-holiday Wednesday each month except July and August at **Roxborough Memorial Hospital, 5800 Ridge Avenue, Philadelphia, PA 19128**
Maps and directions are available at www.phil-mont.org

License Examinations are held on the fourth **non-holiday Thursday** each month at

Community Ambulance Association, 1414 E. Butler Pike, Ambler PA 19002

Registration begins at 7:00 P.M. Applicants should contact Jim McCloskey NS3K at 215-275-2979 or jmccloskey@msn.com for the latest information.

Club Stations W3QV/R: The Jim Spencer Memorial Repeater System

Ridge & Port Royal Avenues, Philadelphia, PA **Trustee: W3RM**

147.03 MHz + PL 91.5 Hz 444.80 MHz + PL 186.2 Hz

Reach us on EchoLink through WU3I-L

W3EM: Field Day/special event station Trustee: W3VVS

The Officers

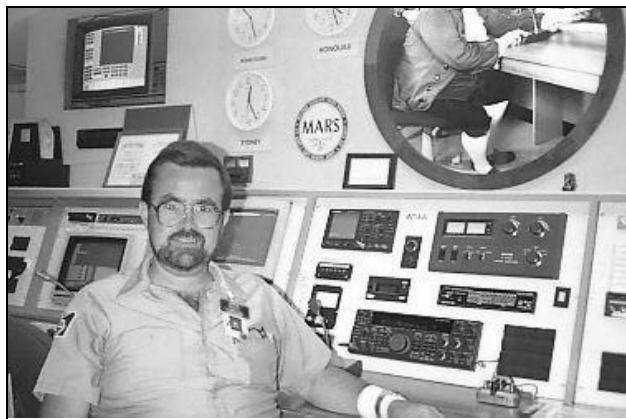
President: WU3I Steve Hoch, 546 Monastery Ave, Philadelphia PA 19128 wu3i@arrl.net

Vice President: N3QV Eric D. Marano, PO BOX 233, Skippack PA 19474 n3qv@arrl.net

Secretary: W3STW Al Tribble wstw@juno.com

Treasurer: W3RM Richard A. Moll roger.mike@verizon.net

Asst. Treasurer: N3MT Michael P. Taraborrelli michaelmt_1999@yahoo.com

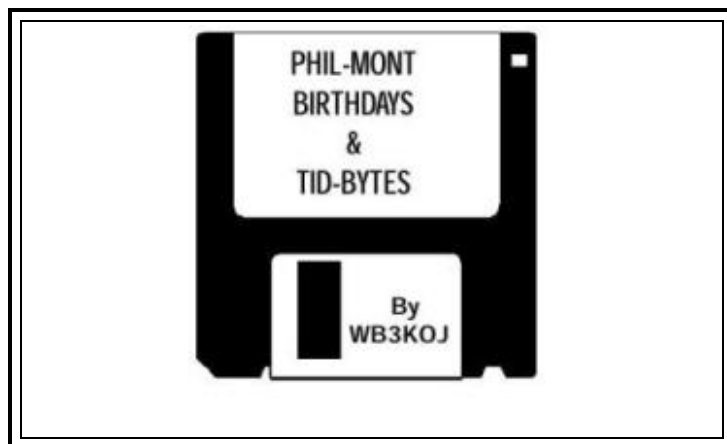
The Prez Sez...

Ok gang its crunch time here at PMRC. The 60th Anniversary celebration year is half over and it is time for FIELD DAY! I am looking forward to seeing you all at Fort Washington State park for the fun and companionship. Of course there is the monthly meeting and it is the last meeting before the summer break. Here's hoping to see as many of you as possible for these 2 events later this month. Have a great summer and stay safe.

de Steve, WU3I



There are two test sessions this month: The regular Thursday night session is on the 25th and a Saturday morning session on the 6th.

**June Birthdays**

- 03 Jennifer Miller – KB3MIV
 - 04 Dick Moll - W3RM
Sue Sadwin - N2CYA
 - 05 John Drenzo Jr. – KB3SJV*
 - 06 Chuck Hillman - K3QLY
 - 10 Thomas Maresca (OM K3YPH)
 - 12 Miriam Elmaleh - K3UJI
 - 15 Caitlin Brady – W3CJB*
John Coupe - WA3BXH
 - 30 Mike Lenczynski - KA3EIP
Fred Rice - WA3KIO
- *New Member 2009

And some Early July Birthdays

- 02 Ted Katz - N3OWM
Alice Popovic (XYL W3AOK)
- 03 Nicole Bohlander (XYL WA3KLR)

NOTE: Directory Change

New email address-
kb3iv@comcast.net

Membership Stats

At press time P.M.R.C. had:

- 89 Full Paid Members
- 9 Family Members
- 3 Youth Members
- 2 Honorary Members
- 0 Pending Members

From the Secretary

PMRC General Meeting – May 13th, 2009

PMRC President Steve, WU3I, called the meeting to order at 1938 hours, the first order of business was to get Club reports.

Club Treasurer Dick, W3RM, reports that the response by members to the call for club dues has been great, thus the Club's financial status is good.

Scholarship winners of the Foundation for Amateur Radio (FAR) should take place around the end of June 2009, perhaps during Field Day. Dick gave tribute to Sam Kuncovich, N3QIE, (SK), for his many, many years of artwork designing the Blurb's front cover.

Rick, ND3B and Club Editor, suggests an "on the air" activity for new amateurs that feel a bit microphone shy. A "beginner's net" may be in the works. *

Jim, NS3K, VE Chairman welcomed Ed, KB3IV, to the cadre of volunteers that help with the licensing and upgrading. FYI there will be a June 6, 2009 test session. See page two of the Blurb for more details.

Ed, KB3IV, Net Control Chairman reports that he's still looking for Club members to act as net control for the Club's Sunday morning nets. In a response to the question "how often would I have to act as net control" from John, KB3SJS, Ed estimated he would be on an 8-week cycle.

Ed informed us that the Broomall off-site receiver problem is fixed; there were poor reception reports and now the system is working as intended. The repeater shack repair (painting etc.) and off site antenna installation still needs work.

Gene, N3XKE, Membership Chairman, reports that John, KB3SJS Keiko, KB3SJT and John, KB3SJV have been granted Club membership. They received a round of applause from the membership. Gene showed off the Club's Field Day shirt and

immediately sold out. Time is short, there is only one more Club meeting before Field Day. Contact information is on page two of the Blurb.

At 1958 hours, Steve turned the meeting over to Carmen for an excellent Power Point presentation on the Club's 2008 Field Day activities.

De Al W3STW, PMRC Secretary

** I heard John, KB3SJV and Doug, N3NZZ discuss this idea on the air one night and thought it was a good one.- ed.*

**Sunday morning Net Control stations
are still needed.**

Contact Ed, KB3IV, to sign up!

The Radio Stores series continues...

LEECE-NEVILLE

The revolution begins

by Bob Thomas, W3NE

Prior to 1960, American automobiles had 6-volt electrical systems – with *positive* ground, yet! Nearly all European cars, in contrast, had superior 12-volt negative-ground systems. Eventually, as more and more electrical accessories were stuffed into U.S. cars, our manufacturers were finally forced to change over to today's 12-volt negative-ground system, but that didn't do hams any good back in the 1950s. It was bad enough without amateur equipment in the car, but if you ran 50-watts AM, creating a total primary load current of around 20-Amps at 6-volts, every time the car came to a stop voltage sagged, headlights dimmed, and a feeling of uneasiness descended whenever the engine idled for very long.

As so often happened every time there was a potential bonanza in the offing for Phil-Monters, Jim Spencer, then W3QQH, got wind of availability of several Leece-Neville 6-volt alternator systems¹ that had been removed from Parks Department vehicles. This was at a time when hardly anybody had heard of alternator-based electrical systems, but after we learned what the advantages were – nearly full output even at cranking speed, low electrical noise due to absence of a high current commutator and brushes, and superb regulation – several of us jumped at the opportunity to buy one of the used systems Jim had dickered for.

With faded memory, about \$40 seems to be what we most likely paid for a Leece-Neville system, which was considered a bargain at the time. For that price we got a 3-phase alternator with a mounting bracket, a special old style “buzzer” voltage regulator, a bunch of cables, and a separate 3-phase selenium rectifier, everything covered in a dense layer of fine dust from their former field service. In modern practice rectifiers are integral with the alternator, but compact silicon rectifiers had not been invented then, so we had to be content with a bulky selenium bridge rectifier made with a stack of cooling fins no less than 10-inches long and 4-inches square! Fortunately cars of that era had a lot of spare room up front under the hood, so there was no problem mounting the rectifier stack in the cooling air stream.

The point of no return was approached with considerable trepidation as I removed the standard 6-volt generator and regulator from my '53 Ford. Installation of the Leece-Neville system went without a hitch; when I turned the ignition key and, Eureka – it worked! That set the stage for installing a 50-watt 6146 AM rig powered by an unused surplus PE-103 dynamotor in the trunk. A dynamotor is a combination motor and generator on one shaft. The motor ran on 6V. from the car and the generator put out 500-volts dc at about 160 ma. It was controlled by a relay actuated from the push-to-talk switch, so every time I transmitted, a short duration, muted “o-i-i-nk” emanated from the trunk as the PE-103 jumped to operating speed.

Thanks to Jim, a new era in reliable mobile radio operation had begun!

¹ *Leece-Neville is still in business today. Their system is now the basis of the electrical systems in nearly all vehicles in the world. It is based on an alternator with a magnetic rotor comprised of three finger-like permanent magnets interleaved with three other magnets of opposite polarity. The rotor is driven by the vehicle's engine to create a three-phase rotating field that induces voltages in three stator (stationary) windings made of heavy wire. Voltages from the stator windings have a three-phase relationship with 120 degrees between each phase, contributing to relatively smooth dc after rectification by a 3-phase rectifier. Output voltage is regulated by a small feedback current fed through slip rings to an auxiliary field winding on the rotor.*

Radio Stores feedback...

Need to say to all concerned that I have greatly enjoyed Bob Thomas' reports on the old days on Arch Street. I spent many hours and dollars down there myself, and think the articles were "right on."

73, Henry, W3UI

Beginner's Corner

... or ...

Things your mother never told you about ham radio.

To our new members: Many of our names on page 2 have an email address and you can write to us with your questions. You can also call these members if you prefer to telephone:

Dick, W3RM - 215-659-4488

Steve, WU3I - 215-483-7306

Rick, ND3B - 215-908-7225

Of course, the best thing is to get on the air!

***This month a very basic
and useful skill ... Soldering.***

From the *Technology Interface* / Fall 1997

ABSTRACT

Hand soldering techniques and various alloys used in the soldering process are discussed. Some guidelines for selecting soldering alloys, characteristics of various solder types, solderable metals, solder selection, the process of producing a good solder joint, and desoldering are discussed. A summary of causes for poor solder connections is given.

WHAT IS SOLDERING?

Soldering is a process by which you can join metal items together by applying heat along with special metallic alloys (solder) and allowing them to cool. This results in a metal bond between the metals that is strong and has good electrical conductivity under harsh mechanical environments.

WHAT IS SOLDER?

Solder is a metal alloy consisting of distinct percentages of two or more metals. In electrical work, the alloy is usually tin (Sn) and lead (Pb). However, Silver (Ag), Zinc (Zn), and Antimony (Sb) are used for special soldering alloys. Solder that uses lead has a lower melting point than pure lead. However, some solders contain no lead.

- Each alloy composition has unique characteristics, eg., melting point, hardness, and solid-to-liquid transition properties, and may or may not be eutectic.
- A eutectic alloy is a composition of one or more metals that has one sharp melting point and no intermediate "plastic" stage. Non-eutectic compositions have a semi-liquid temperature range where the metal can be "worked" due to its plastic nature.

For example lead has a melting point of 621 °F (327 °C) and tin melts at 450 °F (232 °C). Alloying

63% tin with 37% lead forms a eutectic that melts at 361 °F (183 °C). Note that this particular alloy's melting point is lower than either of the parent metals.

WHAT IS THE IMPORTANCE OF ALLOY TYPE?

- Every soldering application requires solder with particular characteristics. Important characteristics include melting temperature, hardness, strength, and ease of bonding the metals being soldered.
- Alloys are designed to fulfill particular soldering needs . Examples
- Automotive uses such as radiator, body and fender repair. SN30 (30% tin 70% lead) or SN40 (40% tin 70% lead) are generally used. These solders have a wide plastic range which allows the solder to be worked before it solidifies or melts. For example, SN30 becomes completely liquid at 496 °F (258 °C). As temperature is lowered below this point, it becomes plastic and workable until it solidifies at 361 °F (183 °C).
- Plumbing - plumbers generally use solid SN50 solder in conjunction with an externally applied flux. This 50% tin 50% lead alloy has a melting point of 414 °F (212 °C) and becomes plastic at 361 °F (183 °C). Some city ordinances now prohibit the use of solders that contain lead for use in potable water systems so a non-lead solder is used.
- Electrical Connections - The most popular solder alloys used for Electrical connections are SN60 and SN63. The SN63 is eutectic and melts at 361 °F (183 °C); it has no plastic region. SN 60 is more general purpose, is less expensive, and has a very small plastic region (about 8 °F). It also has a low melting point of 361 °F. These alloys allow rapid solder time that can prevent excessive temperature being applied to the

component and helps prevent "cold" and "fracture" joints as discussed later.

WHAT IS THE PURPOSE OF FLUX?

Flux is a chemical cleaner which removes oxidation from metal surfaces so that a good solder-to-metal bond can be made.

- **Flux must be applied to the surfaces at the bond point before soldering can be successfully accomplished** because copper and other materials rapidly oxidize upon exposure to air, moisture, and heat. This oxidation is caused by exposure to the oxygen in air/moisture and forms a non-conductive, non-solderable surface on the metal. On copper surfaces, oxidation causes the bright shiny copper color of the non-oxidized surface to appear a dull, orange color.
- **Flux comes in many grades.** However, there are two general types: non-corrosive and non-conductive (milder rosin types); and corrosive and conductive (very strong acid types).

IMPORTANT: NEVER USE CORROSIVE AND/OR CONDUCTIVE FLUXES TO SOLDER ELECTRONIC COMPONENTS.

- **Solder can be manufactured with or without a core of flux.**

o "Solid" solder has no core of flux. It is available in wire, bar, and other forms. An external flux (usually liquid or paste) must be applied when soldering with these non-flux solders. The flux is applied to the joint before the joint is heated. Many of the fluxes are heat activated, meaning they do not remove the oxide layer except while hot. Thus, the flux residue does not continue to act once it cools and it is often not removed once the soldering has taken place. However, some fluxes become tacky once they cool and thus can capture dirt and contamination. In time, the normally high resistance

cold flux that may exist between solder points can develop into low resistance bridges causing circuit malfunction. This type flux should be removed once the soldering is complete. Commercial flux removers are available. Isopropyl alcohol is often used.

o "Flux core" solder is usually in wire form. The center of the wire is filled during manufacturing with the proper amount of flux required for soldering. Generally, no additional flux is required when soldering with the flux core solders. The surfaces to be soldered should not be visibly oxidized when soldering with these fluxes. Fine grade steel wool or sandpaper are sometimes used to "polish" the surfaces prior to soldering.

WHAT METALS CAN BE SOLDERED?

- **Copper is readily soldered** - Also, through chemical action, copper dissolves in the solder to form an excellent bond.
- **Beryllium copper, brass, and bronze are solderable, but not as easy as copper.**
- **Kovar and mild steel are solderable but with some difficulty.**
- **Chromium and stainless steel are extremely difficult to solder.**

Aluminum can be soldered using special fluxes and cleaning procedures. Aluminum can have joints that look good (shiny and smooth), but actually be poor structurally and have poor adherence.

*By: David L. Pippen
dpippen@nmsu.edu
Assistant College Professor
New Mexico State University
To be continued...*

Stop by 28.480 any night at 2000L and meet Kurt, NN3C and other local 10M enthusiasts.

For Sale:

Double Braided Dacron Dipole Rope now in stock. 3/16 diameter. Black in color. Will cut to requested length. High stretch resistance. Strength: Excellent, Resistance to abrasion: Excellent, Resistance to chemicals: Very good, Acids: Good. Sunlight resistance: Excellent, Shock load: Excellent. Does not float. Seal ends with heat. Resistant to mildew. Breaking strength 630 Pounds. \$0.14 per foot

Also:

Icom IC-746 factory stock with manual, power cord and Icom SM6 Microphone. &700.00

Ameritron AL-811H amplifier Factory Stock with copy of manual. New \$900.00 Sale \$650.00

Contact Steve, WU3I, at 215-605-6074 or wu3i@arrl.net for any of the items above.

Please feel free to forward this info to other clubs of which you are a member.

June at PMRC...

3rd Wed -- Board of Directors Meeting
 6th Saturday VE session
 7th Sunday -- WB3KOJ NCS
 10th Wed -- General Membership Meeting
 12th Digital transition
 14th Sunday -- WU3I NCS
 Flag Day
 21st Sunday -- KB3IV NCS
 Father's Day
 Summer begins at 0545UTC
 25th Thur -- VE test session
 27th Field Day weekend begins at 1800Z
 28th Sunday -- KC2PMW NCS

And don't forget the **ARES** net every Sunday night at 2100L on the club repeater. Larry, K3HWE, wants to hear from **you!**

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First Class Mail

The Phil-Mont Mobile Radio Club, Inc
 641 Kismet Road Philadelphia PA 19115

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